

**ABSTRACT**

The present invention relates to the high bone mass (*HBM*) gene, the corresponding wild-type gene (*Zmax1*), and mutants thereof. The genes identified in the present invention are implicated in regulation of physiological lipid levels, and thereby lipid-mediated diseases and conditions. The invention also provides nucleic acids, including coding sequences,  
5 oligonucleotide primers and probes, proteins, cloning vectors, expression vectors, transformed hosts, methods of developing pharmaceutical compositions, methods of identifying molecules involved in lipid level regulation in a subject. In preferred embodiments, the present invention is directed to methods for treating and preventing  
10 atherosclerosis, arteriosclerosis cardiovascular disease, atherosclerotic and arteriosclerotic associated conditions.